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## An Extremely Rare Complication of Widespread Retroperitoneal Abscess Originating from Anorectal Horseshoe Abscess

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### ABSTRACT

Retroperitoneal and horseshoe abscesses are particularly important because of the anatomic characteristics and the clinical differences between treatment approaches. There are several challenges in treating perirectal and retroperitoneal abscess, the most important of which are partial recovery, high recurrence rates, and continence problems. A 65-year-old male patient underwent laparotomy at an external center with a diagnosis of ileus. Although no intraoperative pathology was detected, ileus persisted postoperatively, and the patient was referred to our clinic where he was diagnosed with a complicated horseshoe abscess, 9 cm in diameter and displaying retroperitoneal extension. Perirectal abscess drainage was performed, and the patient was discharged on the 5th day after the treatment. To the best of our knowledge, there have not been any previously reported cases of ileus caused by retroperitoneal abscess as a complication of horseshoe abscess. The case presented in this paper represents a rare complication, thereby contributing to the literature which remains to be explored.

**Keywords:** Retroperitoneal abscess; Horseshoe abscess; Ileus; Perirectal abscess.

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### Introduction

Retroperitoneal abscesses are among the rare clinical cases seen in surgical practice. The retroperitoneal region reacts to bacterial contamination to a lesser extent compared to the intraperitoneal region. Therefore, retroperitoneal abscesses tend to follow a more silent, asymptomatic and chronic course, and diagnosis and treatment may be challenging in several aspects. Delayed diagnosis and insufficient drainage may lead to a high rate of

mortality and sepsis. Despite treatment, mortality rates vary between 11-20% in patients presenting with this condition [1-4].

Horseshoe abscesses which develop after complications of perirectal abscesses may become widespread and reach higher anatomic structures. These are clinically important, difficult-to-treat cases due to high rates of treatment failure and recurrence, and because of the problems associated with surgical treatment, such as continence [1-4]. From a scan of the relevant literature, no previous

case of retroperitoneal abscess formation after complicated horseshoe abscess and subsequent ileus was found. Therefore, the present case is reported as being a rare and unusual case in this respect.

### Case Report

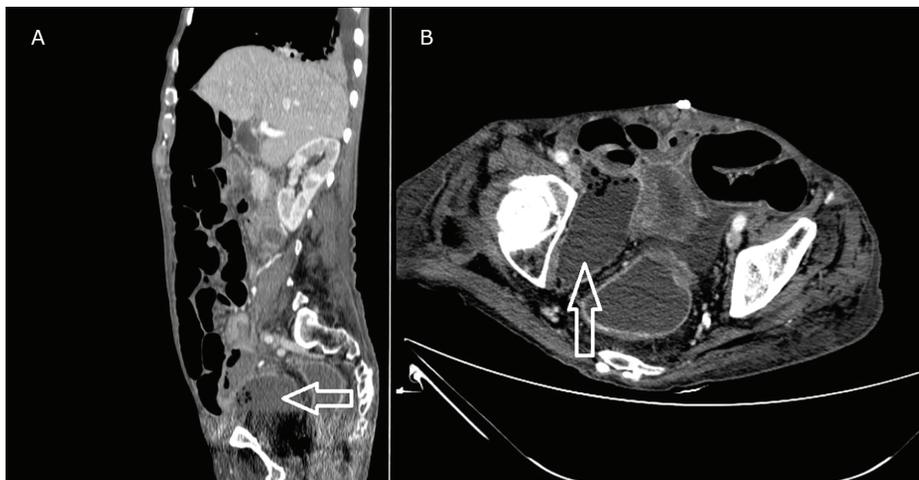
A 65-year-old man presented at a state hospital with complaints of abdominal pain, swelling, nausea and vomiting, and he was taken into surgery with a diagnosis of ileus. No pathology was identified during the operation, and the surgery was terminated after the placement of one drainage tube. The drainage tube was removed on the postoperative 3rd day. The patient experienced abdominal swelling and pain, so was transferred to our clinic on the postoperative 7th day with a preliminary diagnosis of ileus. The patient's anamnesis included a prosthetic implantation in the left leg, and no history of regular medication use. Arterial blood pressure was 130/60 mm-hg, and body temperature was measured at 37.5 °C. Bilateral crackles were heard in the lungs during physical examination of the patient. There was seen to be widespread abdominal distension and rebound (Table 1).

The results of routine laboratory tests were as follows: leukocytes 20000 /mm<sup>3</sup>, Hgb 13.2 g/ dL, hct 39.4. Biochemistry analyses showed Glc:146 mg/ dL, Urea: 59 mg/ dL, Creatinine:0.45 mg/ dL, Na:147 mmol/ L, K:3.9 mmol/ L, Ca: 7.9 mg/ dL, AST: 24 U/L, ALT:15 U/L. The patient was transferred to the intensive care unit (ICU) for monitoring, and

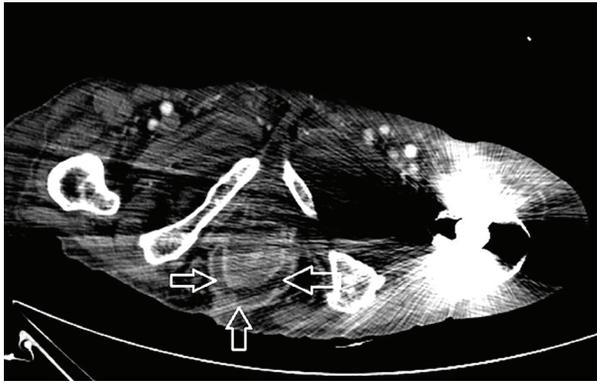
was put on intravenous fluid therapy. Standing direct abdominal radiography showed dilated colon and small intestines, and air-fluid levels. Contrast tomography of the lower abdomen demonstrated an intra-abdominal abscess sized 9x4 cm, located on the right lateral side of the rectum with extensions to the right inguinal tract and containing air spaces (Figure 1). An abscess that contained air spaces was detected, measuring 13 mm at the greatest width in the ischio-rectal region, showing marked internal wall staining extending towards the posterior of the rectum but the borders could not be clearly defined because of metal artefact associated with the left hip prosthesis (Figure 2). The patient was taken into surgery with the diagnosis of perirectal or ischio-rectal abscess. With the patient in the lithotomy position, the ischio-rectal region was accessed through incisions at the 9 and 12 o'clock positions. The pelvic region was entered and approximately 500 cc fluid was drained from the abscess. The abscess pouch was closed with an incision at the 2 o'clock level in the lithotomy position. A drainage tube was inserted up to the pelvis and the operation was completed. The patient was transferred to postoperative ICU and after 24 hours, was re-admitted for surgery for wound debridement. Follow-up ultrasonographic imaging of the abdomen did not show any intra-abdominal abscess. The air-fluid levels were not observed on the standing direct abdominal radiography. Oral feeding was initiated as the patient had gas and feces output. He was discharged on the postoperative 5th day. In the follow up examinations no complication occurred.

**Table 1.** Our findings comparing to previously published article in the literature.

Parameters	Our case	Previously study [4]
Age (years)	65	>60 (48%)
Gender	Male	Male (48%)
Pain	+	62%
Vomiting /altered bowel habits	+	34%
Rebound	+	78%
Fever	+	%82
WBC	20000/mm <sup>3</sup>	10000-20000/ mm <sup>3</sup> (47%)



**Fig. 1.** Computerized tomography (CT) of the lower abdomen demonstrated an intra-abdominal abscess sized 9×4 cm demonstrated by arrows (A: Sagittal view, B: Axial view).



**Fig. 2.** Axial computed tomography (CT) image demonstrating the horseshoe abscess located at the posterior rectal area.

## Discussion

Retroperitoneal abscess is reported at a high rate in males and during the 6th decade of life [5]. The disease may initially present with pain in the abdomen, flank and groin, and symptoms such as fever, fatigue and loss of appetite, may progress insidiously as the infection worsens. A retroperitoneal abscess can also be asymptomatic in rare cases. Patients may complain of tenderness if there is a mass in the abdomen, flank region and more rarely in the scrotum or the femur. Perirectal pain is a common finding of perirectal abscess and horseshoe abscess, although cases with spontaneous drainage due to the changes in perirectal sensation may not develop any pain (e.g., spinal cord injuries, unresponsive patients, geriatric patients and those with low debility, etc.) [6]. In the current case, perirectal pain developed at a later stage and the horseshoe abscess resulted in abdominal pain due to a highly-localized retroperitoneal abscess and development of ileus. As the findings of ileus manifested, the patient underwent laparotomy in another center due to ileus. No pathology which could have caused ileus was identified during the operation and when the patient was later referred to our clinic because of the persistent manifestations of ileus, retroperitoneal abscess due to horseshoe abscess was diagnosed. The fact that the patient was elderly and dependent might have affected the development of his clinical picture. In addition, both abdominal irritations caused by the abscess and suppuration from the retroperitoneal region to the abdomen, and the spread of the abscess itself may have complicated the differentiation of this condition from intra-abdominal pathologies, lumbosacral pain, pelvic inflammatory disease and urinary system infections. In a previous study conducted by Marcus RH *et al.*, 5% of patients with perirectal abscess had horseshoe abscess and 3% of

all patients presented with abdominal pain and 91% of all patients with perirectal pain [7].

There are several factors involved in the etiology of a retroperitoneal abscess. Perforations of neoplastic diseases of the colo-rectum, diverticulitis, retroperitoneal appendicitis, pancreatitis, pancreatic cancer, inflammatory bowel diseases, genitourinary extravasation secondary to obstruction, osteomyelitis, postoperative duodenal ulcer perforations, pelvic and puerperal infections, trauma and hematogenous and lymphatic spread of a distant infection are listed among these factors [2, 4, 8-12].

In the current case, a horseshoe abscess located in the perirectal region extended towards the retroperitoneum and resulted in the development of a 9x4 cm retroperitoneal abscess. Conditions, such as diabetes mellitus, chronic alcohol consumption, glucocorticoid use, malignancies, and distant infections, could increase the risk of complications by impairing the host immune response [2]. In the current case there was no concomitant disease other than the infection. The abscess itself, as the source of infection, may have resulted in suppuration and have led to the picture of paralytic ileus by suppressing bowel movements. This argument is supported by a previous study performed by Hanley PH. [6].

A clinician can only partially evaluate the retroperitoneum during the physical examination, and laboratory investigations provide limited information. Therefore, radiological investigations are the key elements of a diagnosis. Computed tomography (CT) is a useful diagnostic tool in the assessment of the retroperitoneal region [13]. In the case presented here, the diagnosis of complicated perirectal, retroperitoneal abscess was made based on CT scanning. In addition, magnetic resonance imaging (MRI) has also been proven to be a useful tool to assess the relationship of a complex horseshoe abscess with the deep postanal region, as well as to evaluate secondary abscess collections, additional fistula, internal openings, the degree of spread of abscess and sphincter involvement [14, 15]. An MRI scan was not performed on the current patient as he presented at the Emergency Department and had a femur prosthesis.

In conclusion, retroperitoneal abscess may follow a silent clinical course, and diagnosis can therefore, be difficult, which may result in serious complications. This case demonstrated that retroperitoneal abscess, as a complication of a horseshoe abscess, may also result in ileus, which is a clinical condition that should be kept in mind during differential diagnosis of similar cases.

**Conflicts of Interest:** None declared.

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